EXTENSIBLE COMPUTING SYSTEM

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Methods and apparatus providing a dynamically sized, highly scalable and available server farm are disclosed. A Virtual Server Farm (VSF) is created out of a wide scale computing fabric ("Computing Grid") which is physically constructed once and then logically divided up into VSFs for various organizations on demand. Each organization retains independent administrative control of a VSF. A VSF is dynamically firewalled within the Computing Grid. An allocation and control of the elements in the VSF is performed by a Control Plane connected to all computing, networking, and storage elements in the computing grid through special control ports. The internal topology of each VSF is under control of the Control Plane.; No physical rewiring is necessary in order to construct VSFs in many different configurations, including single-tier Web server or multi-tier Web-server, application server, database server configurations. Each tier of a multi-tier VSF (e.g. Web server tier, application server tier, database server tier, etc) can be dynamically sized based on the load on the servers in that particular tier. Storage devices may include a plurality of pre-defined logical blueprints that are associated with roles that may be assumed by the computing grid elements. Initially, no computing element is dedicated to any particular role or task such as Web server, application server, database server, etc. The role of each computing element is acquired from one of a plurality of pre-defined, stored blueprints, each of which defines a boot image for the computing elements that are associated with that role.